

**VERSION WITH MARKINGS TO SHOW CHANGES MADE**

**IN THE SPECIFICATION**

**Page 1**, between the title and paragraph [0001]:

[0000.2]     CROSS-REFERENCE TO RELATED APPLICATIONS

[0000.4] This application is a 35 U.S.C. 371 application of PCT/DE 01/01720, filed May 8, 2001.

[0000.6]     BACKGROUND OF THE INVENTION

paragraph [0001],:

[0001]       [Prior Art] Field Of The Invention

**Page 3**, between paragraphs [0005] and [0006]:

[0005.5]     DESCRIPTION OF THE PRIOR ART

**Page 7**, paragraph [0013]:

[0013]       [Advantages of the Invention] SUMMARY OF THE INVENTION

**Page 12**, deleted paragraph [0024]:

[0024] [Based on the direct-injection internal combustion engine of the type defined at the outset, it is further proposed, for attaining the object of the present invention, that the fuel metering system is embodied in accordance with one of claims 5-9.]



**Page 14**, paragraph [0030]:

[0030] [Drawing] BRIEF DESCRIPTION OF THE DRAWINGS

paragraph [0031]:

[0031] Further characteristics, possible applications, and advantages of the invention will become apparent from the ensuing description of exemplary embodiments of the invention, [ which are shown in the drawing. All the characteristics shown or described individually or in arbitrary combination form the subject of the invention, regardless of how they are combined in the claims or their dependency and regardless of their wording or illustration in the specification and the drawing. Shown are:] taken in conjunction with the drawings, in which:

**Page 15**, between paragraphs [0037] and [0038]:

[0037.5] DESCRIPTION OF THE PREFERRED EMBODIMENTS

**Page 17**, paragraph [0042]:

[0042] The high-pressure reservoir 16 is embodied as a storage strip of a common rail (CR) fuel metering system. A pressure sensor is disposed on the high-pressure reservoir 16; it detects the injection pressure prevailing in the high-pressure reservoir 16 and generates a corresponding output signal [p<sub>r</sub>] P<sub>r</sub>. From the high-pressure reservoir 16, a plurality of injection valves 9 - in the present case, four of them - branch off, by way of which fuel is injected into the combustion chambers 4 of the cylinders 3 of the engine 1. For injection of fuel, the injection valves 9 are triggered by a suitable trigger signal ES. The spark plug 10 is triggered by a trigger signal ZW.



**Pag 20**, paragraph [0048]:

[0048] Both high-pressure pumps 14, 15 are disposed in this single fuel circuit. Both high-pressure pumps 14, 15 are triggered independently of one another by the control unit 22 via a common pressure regulating circuit. For economy of operation, in terms of resources, of the fuel metering system 11, both high-pressure pumps 14, 15 are triggered with the same triggering time signal T. The triggering time signal T is accordingly calculated once and for all in the control unit 22 for both high-pressure pumps 14, 15.

**Page 22**, paragraph [0053]:

[0053] Fig. 3 shows a triggering of the high-pressure pumps 14, 15 of the fuel metering system [1] 11 of Fig. 2 in accordance with a preferred embodiment. In the upper half of Fig. 3, the stroke [h\_1]  $h_1$  of the high-pressure pump 14 is shown, and in the lower part, the stroke [h\_2]  $h_2$  of the high-pressure pump 15 is shown. It is clearly seen that the two high-pressure pumps 14, 15 are triggered oppositely from one another. It can also be learned from Fig. 3 when the pump pistons of the high-pressure pumps 14, 15 execute an intake stroke, or when they pump fuel into the high-pressure reservoir 16 in a pumping stroke.



**Page 24, after paragraph [0055]:**

[0056] The foregoing relates to preferred exemplary embodiments of the invention, it being understood that other variants and embodiments thereof are possible within the spirit and scope of the invention, the latter being defined by the appended claims.



[Abstract] **ABSTRACT OF THE DISCLOSURE**

The present invention relates to a method for operating a fuel metering system [(11)] of a direct-injection internal combustion engine [(1)], having a fuel supply container [(12)], at least one prefeed pump [(13)], a high-pressure pump assembly having at least two high-pressure pumps [(14, 15)] for pumping fuel out of the low-pressure region [(ND)] into at least one high-pressure reservoir [(16; 16', 16'')], a control unit [(22)] for regulating an injection pressure [(p<sub>r</sub>)] prevailing in the high-pressure reservoir [(16; 16', 16'')], and having fuel injection valves [(9)] for injecting fuel out of the high- pressure reservoir [(16; 16', 16'')] into combustion chambers [(4)] of the engine [(1)]. In order especially in engines [(1)] with large displacement and in engines with more than four cylinders to assure reliable supply of fuel to the combustion chambers [(4)], it is proposed that the fuel metering system [(11)] has one fuel circuit for metering fuel into all the combustion chambers [(4)] of the engine (1), and all the high- pressure pumps [(14, 15)] are disposed in the fuel circuit, and that all the high-pressure pumps [(14, 15)] are triggered independently of one another via a common pressure regulating circuit. [(Fig. 1)]